

EAST Search History

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|-----|----|---|--|----|----|------------------|
| S51 | 4 | "2276039" | US-PGPUB; USPAT | OR | ON | 2006/03/02 19:11 |
| S52 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2007/08/04 18:10 |
| S53 | 11 | ("3497019" "4662458" "4695957" "4794534" "4854397" "4972703" "5064006" "5163521" "5230387" "5250806").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2007/08/04 18:06 |
| S54 | 2 | ("5842149" "6732052").pn. | US-PGPUB; USPAT; USOCR | OR | ON | 2007/08/04 18:07 |
| S55 | 0 | (mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration). CLM. | US-PGPUB; USPAT | OR | ON | 2007/08/04 18:10 |
| S56 | 0 | (mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration). CLM. | US-PGPUB | OR | ON | 2007/08/04 18:10 |
| S57 | 0 | (mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration). CLM. | USPAT | OR | ON | 2007/08/04 18:10 |

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|-----|----|---|---|----|----|------------------|
| S48 | 49 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/03/02 17:48 |
| S49 | 0 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. and mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit | US-PGPUB; USPAT; USOCR | OR | ON | 2006/03/02 17:48 |
| S50 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/03/02 19:11 |

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|-----|----|---|---|----|----|------------------|
| S44 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:40 |
| S45 | 11 | ("3497019" "4662458" "4695957" "4794534" "4854397" "4972703" "5064006" "5163521" "5230387" "5250806").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/03/02 17:39 |
| S46 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/03/02 17:48 |
| S47 | 96 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. | USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/03/02 17:47 |

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|-----|--------|---|--------------------|----|----|------------------|
| S38 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation and speed | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:31 |
| S39 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:31 |
| S40 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration | US-PGPUB; USPAT | OR | ON | 2007/08/04 18:04 |
| S41 | 397143 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and work station | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:32 |
| S42 | 1 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and workstation | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:32 |
| S43 | 4 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:37 |

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|-----|-------|---|------------------------------|----|----|------------------|
| S27 | 18 | drill and string same whip\$3 same control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:53 |
| S28 | 5 | ("5448227" "5201292" "6205851" "5864058" re34435).pn. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/03/02 17:07 |
| S29 | 10646 | control\$4 same drill\$3 same operation\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:08 |
| S30 | 25 | control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:09 |
| S31 | 18 | mwd and tool and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:10 |
| S32 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:28 |
| S33 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:29 |
| S34 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:29 |
| S35 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:29 |
| S36 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:30 |
| S37 | 5 | mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation | US-PGPUB; USPAT | OR | ON | 2006/03/02 17:30 |

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|-----|---------|--|------------------------------|----|----|------------------|
| S16 | 27 | ("0671386" "0748559" "1364508" "1515378" "1719757" "2387391" "3572215" "3720188" "3745887" "3771419" "4262579" "4278050" "4395881" "4395885" "4509464" "4539894" "4693087" "4910963" "5048497" "5372483").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/02/28 14:12 |
| S17 | 21 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. and drill and tool and control | USPAT | OR | ON | 2006/03/02 17:46 |
| S18 | 0 | (175/41.ccls.) and whip\$3 and (tool or bha) same bounce\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:05 |
| S19 | 1 | (wellbore or borehole or (oil same well) or drill\$3) and whip\$3 and (tool or bha) same bounce\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:06 |
| S20 | 2906581 | drill\$3 same string same whip\$3 sane control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:52 |
| S21 | 18 | drill\$3 same string same whip\$3 same control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:38 |
| S22 | 2906561 | oil same well and drilling and drill\$3 same string same whip\$3 sane control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:52 |
| S23 | 2906554 | oil same well and drilling and drillstring same whip\$3 sane control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:53 |
| S24 | 0 | oil same well and drilling and drillstring same whip\$3 same control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:53 |
| S25 | 0 | oilwell and drilling and drillstring same whip\$3 same control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:53 |
| S26 | 0 | oilwell and drilling and drill and string same whip\$3 same control\$3 | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:53 |

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|-----|----|---|---|----|----|------------------|
| S13 | 96 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/02/28 12:18 |
| S14 | 49 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. | USPAT | OR | ON | 2006/02/28 12:20 |
| S15 | 21 | ("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. and drill and tool and control | USPAT | OR | ON | 2006/02/28 16:15 |

EAST Search History

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|------|---|---|------------------|---------|------------------|
| S1 | 9 | ("5448227" "5201292" "6205851" "5864058" re34435).pn. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/03/02 16:56 |
| S2 | 90 | ("5448227" "5201292" "6205851" "5864058" re34435) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/02/27 16:54 |
| S3 | 14 | ("5448227" "5201292" "6205851" "5864058" re34435) and sensor same orthogonal | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/02/27 16:55 |
| S4 | 10 | ("5448227" "5201292" "6205851" "5864058" re34435) and sensor same orthogonal and bha | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/02/27 16:56 |
| S5 | 7 | ("5224201" "5303203" "5375098" "5842149" "5864058" "5924499" "5941305").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/02/27 17:01 |
| S6 | 0 | (schoeppel).in. and hydrogen same inject\$4 | US-PGPUB; USPAT | OR | ON | 2006/02/27 17:02 |
| S7 | 33 | (schoeppel).in. | US-PGPUB; USPAT | OR | ON | 2006/02/27 17:05 |
| S8 | 36 | hydrogen same injector same motor | US-PGPUB; USPAT | OR | ON | 2006/02/27 17:19 |
| S9 | 0 | bha same axis same vibrational and wabble and workstation | US-PGPUB; USPAT | OR | ON | 2006/02/27 17:20 |
| S10 | 0 | bha same axis same vibrational and workstation | US-PGPUB; USPAT | OR | ON | 2006/02/27 17:20 |
| S11 | 4 | bha same axis and workstation | US-PGPUB; USPAT | OR | ON | 2006/02/27 17:20 |
| S12 | 70 | 175/41.ccls. | US-PGPUB; USPAT | OR | ON | 2006/03/02 16:37 |